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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,884	11/13/2003	Masashi Shiraishi	010997B	6111
23850	7590	11/03/2005	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/705,884	Applicant(s) SHIRAISHI ET AL.	
	Examiner Paul D. Kim	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39,40 and 43-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39,40 and 43-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is a response to the amendment filed on 10/24/2005.

Claim Objections

1. Claim 40 is objected to as being a substantial duplicate of claim 39. Claim 39 and claim 40 are essentially duplicates of one another or else are so close in content that they both cover the same thing, despite a slight difference in wording. It is improper to have two claims, which contain the same limitations, in the same application, as one claim would be a substantial duplicate of the other claim.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 39, 40, 43-46 and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soeno et al. (US Pat. 6,246,552) in view of Bonin (US PAT. 6,351,354).

Soeno et al. teach a process of making a head gimbal assembly comprising steps of: preparing a precise positioning actuator (4) with a pair of movable arms (41) having slider fixing sections at a top end (44, as per claim 44) capable of displacing in response to a drive signal applied thereto; catching a head slider (2) with at least one

head element (1, as per claim 53) in a space between the movable arms of the actuator; and fixing the actuator with the caught head slider to a suspension (3) as shown in Fig. 12 (see also col. 26, lines 6-33).

As per claim 43 the actuator is fixed to the suspension by an adhesive (col. 33, lines 58-63).

As per claim 45 there are air gas between the arms and the side surface of the slider as shown in Fig. 12.

As per claim 46 the actuator has a base (43) fixed to the suspension (3) and the arms extending from the base as shown in Fig. 12.

As per claim 51 the actuator has a U shape as shown in Fig. 12.

As per claim 52 the actuator is thinner than the slider as shown in Fig. 12 (see also col. 26, lines 17-22).

As per claim 53 the at least one head element (1) is at least one thin film magnetic head element.

Even though Soeno et al. do not teach dimensions of a width of the arms and the slider, Soeno et al. teach that fixing sections are coupled opposite sides of the slider for holding or supporting to form the actuator assembly as shown in Fig. 12. Therefore, it would be obvious that the width of the arms could be smaller than the width of the slider in order to hold or support the slider. In addition to that while the arms hold or support the slider by the fixing sections of the arms, a force or pinching force should be applied to the slider to hold or support the slider.

However, Soeno et al. do not teach to fix the slider with the arms with an adhesive after the fixing. Bonin teaches an actuation system having an actuator (40) and a slider (24) and fixing between the actuator and the slider with an adhesive such as epoxy in order to fix the slider to the actuator as shown in Fig. 4 (see also col. 3, lines 39-67). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fixing the slider with the actuator of the head gimbal assembly of Soeno et al. by an adhesive as taught by Bonin in order to fix the slider to the actuator firmly.

Also, in the manufacturing of the electrical assembly, the adhesive in between the element has to be cured for fixing each other, which is old and well known in the art.

4. Claims 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soeno et al. in view of Bonin, and further in view of Fukushima et al. (US PAT. 5,457,075).

Soeno et al., modified by Bonin, teach all of the limitations as set forth above including a piezoelectric material used for the actuator. However, Soeno et al. fail to teach an elastic sintered ceramic for the base and arms of the actuator. Fukushima et al. teach a sintered ceramic composite element having a high bending strength to provide good thermal shock resistance (see also col. 2, lines 63-67). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the actuator of the head gimbal assembly of Soeno et al., modified by Bonin, by a sintered ceramic composite element having a high bending strength as taught by Fukushima et al. in order to provide good thermal shock resistance.

In addition, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the elastic sintered ceramic as recited in the claimed invention (as per claims 48 and 50) because Applicant has not disclosed that the ZrO_2 material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Fukushima et al. because the elastic sintered ceramic as recited in the claimed invention would perform equally well such as high bending strength in Fukushima et al. Therefore, it would have been an obvious matter of design choice to modify the elastic sintered ceramic of Fukushima et al. to obtain the invention as specified in claims 48 and 50.

Response to Arguments

5. Applicant's arguments with respect to claims 39, 40, 43-53 have been considered but are moot in view of the new ground of rejection.

6. Applicant argues that the prior art of record fails to disclose the claimed invention such as a width of the arms is slightly less than a width of the slider. Examiner traverses the argument that there should be a force between the arms and the slider to hold the slider. If the width of the arms is larger than the width of the slider, the arms cannot be holding the slider properly. Therefore, it would be obvious that the width of the arms could be slightly less than the width of the slider. Also, Bonin teaches a process of fixing the actuator and the with an adhesive such as epoxy in order to fix the slider to the

actuator. Therefore, it would also be obvious to modify fixing the slider to the actuator of Soeno et al. by an adhesive in order to fix the slider to the actuator more securely and firmly.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

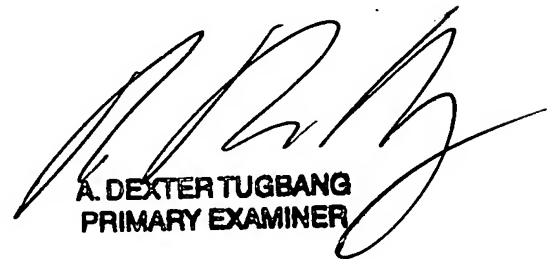
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pdk



A. DEXTER TUGBANG
PRIMARY EXAMINER